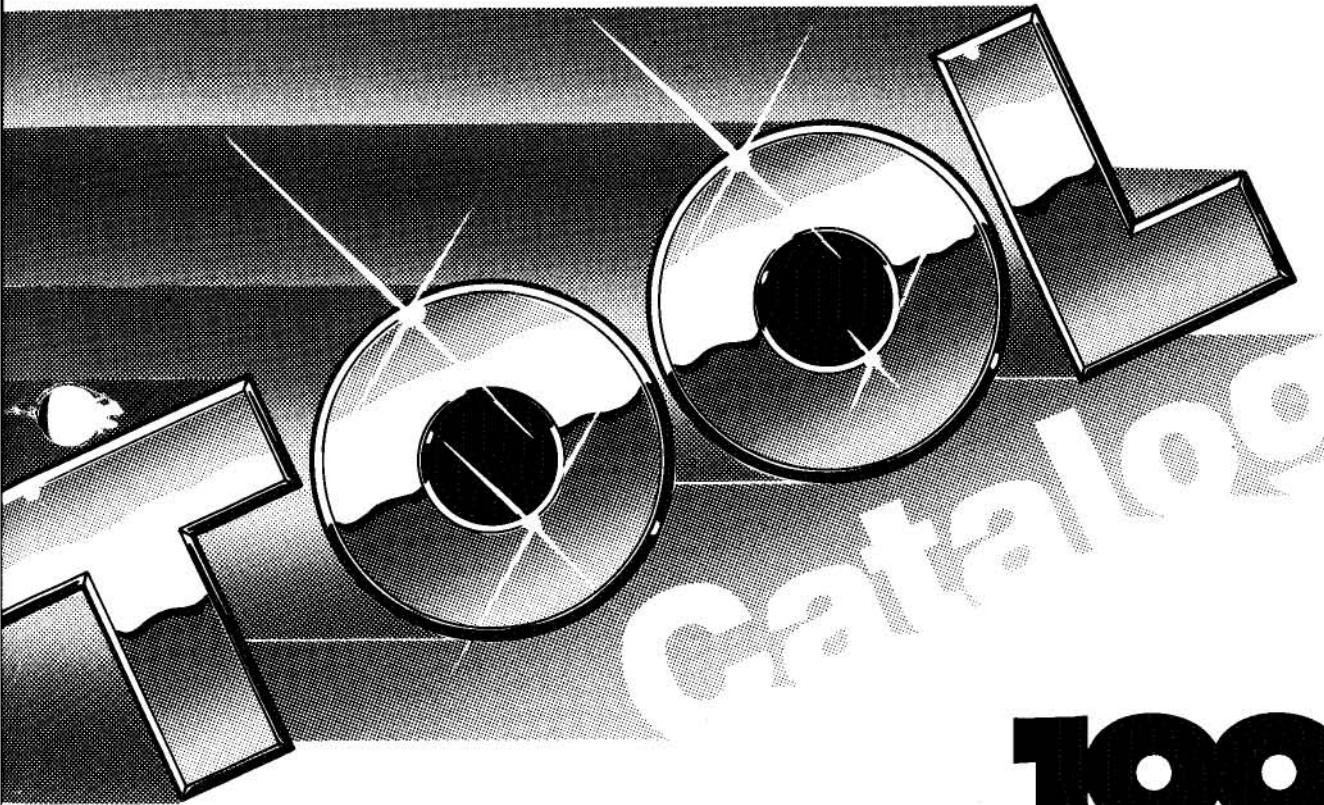


Onan



Catalog

1992



Welcome to the Service Tools Program of Onan Dealers!

The Service Tool Catalog is your guide to a wide assortment of Onan Special Tools.

These Onan Special Tools have been specially engineered for Servicing Onan products. Your service department can now select special tools for regular maintenance, as well as complete overhauls.

Through this program your Onan Distributor is also able to supply your Shop Equipment needs. Ask your distributor for details.

The program is easy to operate. You place your order from one source, receive one bill, and you will find it usually costs less. All of the tools in this catalog should be ordered from your Authorized Onan Distributor.

Service Image

The Onan service department plays a key role in the daily operations of your dealership. This tool program is provided to equip your parts and service departments with service tools to handle those complex jobs of servicing.

The image this equipment offers demonstrates to your customer the evidence that you have the best service available.

Order the tools you need now. Place this catalog in your service library and use it in the years to come for buying additional or replacement tools.



To repair Onan products quickly, efficiently, and safely, you must have the proper tools.

The Onan service tool program will provide you the availability of a wide range of required tools.

What Does the Program Offer?

1. Single Source Ordering - One order can satisfy practically all of your Onan tool requirements.
2. Simple Procedures - U.S. dealers receive one shipment and one bill to pay from your Onan Distributor.
3. Cost Saving Prices - Ordering from one source saves money for you.
4. New Onan Special Tools - Designed with the dealer service shop environment and cost control for the dealer in mind.

Onan Corporation makes no warranty expressed or implied with the sale of this equipment, and expressly disclaims the implied warranties of fitness and merchantability. If assistance in obtaining warranty service is required, you may call or write Service Tools for specific handling procedures as outlined further in this catalog.



RETURN GOODS POLICY

To return items ordered in error etc., contact your Onan Distributor.

RETURN GOODS WARRANTY

To return merchandise to Service Tools for warranty, pack securely in a carton and send prepaid to Service Tools, 655 Eisenhower Drive, Owatonna, MN 55060. In the carton with the merchandise, include a letter, giving detailed reasons for the return, include a copy of your original invoice for the material. Returned items will be thoroughly inspected upon receipt.

DAMAGED ITEMS

If merchandise has been damaged in shipment, notify the transportation company at once so you do not lose your right to file a claim with the carrier. Return broken or damaged merchandise to Service Tools using the procedure as stated above.

WARRANTY

All merchandise distributed by Service Tools is protected where applicable by the manufacturers warranty. If assistance in obtaining warranty service is required, call or write Service Tools for specific handling procedure. Service Tools, P.O. 314, Owatonna, MN 55060, Telephone No. 507/455-7010, Telex NO. RCA 201674.

All merchandise manufactured by OTC Division, SPX Corp. including special tools are covered by the following:



LIFETIME MARATHON™ WARRANTY - EFFECTIVE 4-1-84

All OTC products and parts, with the exceptions noted below, are warranted against defects and workmanship for the life of the product or part.

OTC's warranty is expressly limited to persons who purchase OTC's products or parts of resale or use in the ordinary course of the buyer's business. This warranty does not cover any products or part that has been abused, worn out, heated, ground or otherwise altered, used for a purpose other than that for which it was intended, or used in a manner inconsistent with any instructions regarding its use.

OTC electronic products are warranted against defects in material and workmanship for one year.

This warranty does not cover any chains, batteries, electric motors, knives or cutter blades which are sold with the OTC products. All electric motors are separately warranted by their manufacturer under the conditions stated in the separate warranty.

THIS WARRANTY IS EXCLUSIVE, AND OTC MAKES NO OTHER WARRANTY OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, WITH RESPECT TO THE PRODUCTS MANUFACTURED AND SOLD BY IT WHETHER AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER MATTER. No agent, employee or representative of OTC has any authority to bind OTC to any affirmation, representation or warranty concerning OTC products or parts, except as stated herein.

If any product or part manufactured by OTC is found to be defective by OTC, in its sole judgement, OTC will, at its option, either repair or replace such defective product or part. THIS REMEDY SHALL BE THE EXCLUSIVE REMEDY AVAILABLE FOR ANY DEFECTS IN THE PRODUCTS OR PARTS MANUFACTURED AND SOLD BY OTC OR FOR DAMAGES RESULTING FROM ANY OTHER CAUSE WHATSOEVER, INCLUDING WITHOUT LIMITATION, OTC'S NEGLIGENCE. OTC SHALL NOT IN ANY EVENT BE LIABLE TO ANY BUYER FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, WHETHER FOR DEFECTIVE OR NONCONFORMING GOODS, NEGLIGENCE, ON THE BASIS OF STRICT LIABILITY OR FOR ANY OTHER REASON.

The purpose of this exclusive remedy shall be to provide the buyer with repair or replacement of products or parts manufactured by OTC found to be defective in materials or workmanship or negligently manufactured. This exclusive remedy shall not be deemed to have failed of its essential purpose so long as OTC is willing and able to repair or replace said defective parts in the prescribed manner.

DISCLAIMER

The above warranty is in lieu of any other warranty, expressed or implied, including any warranty of merchantability or fitness for a particular purpose.

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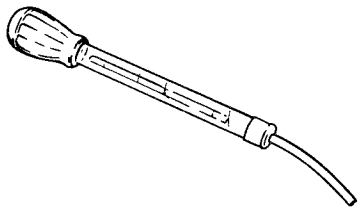
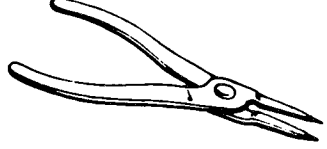
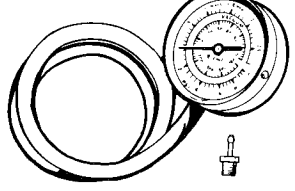
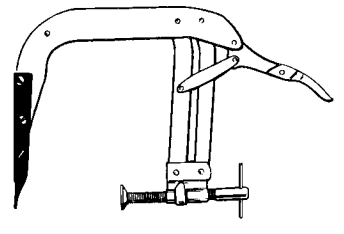
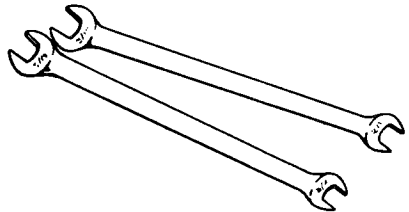
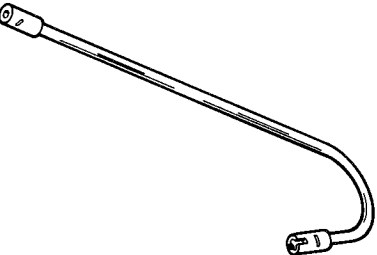
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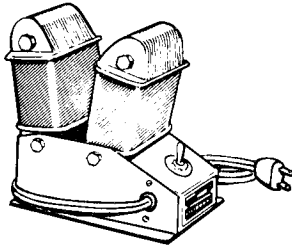
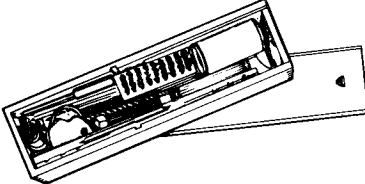
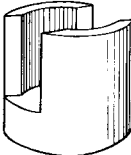
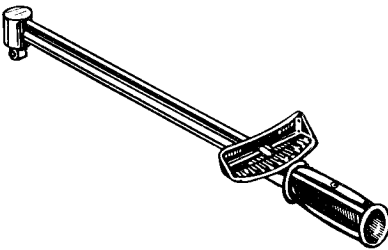
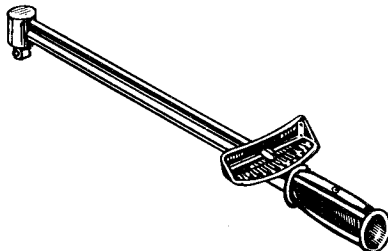
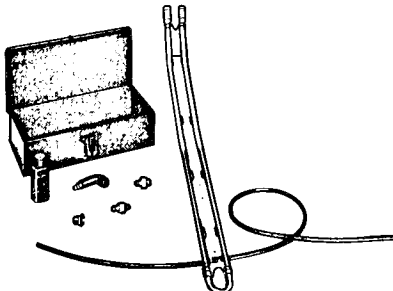


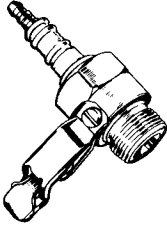
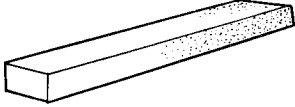

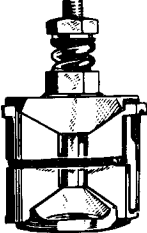
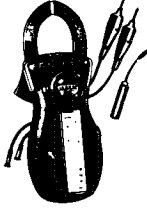
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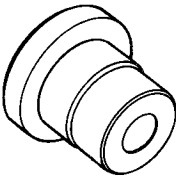
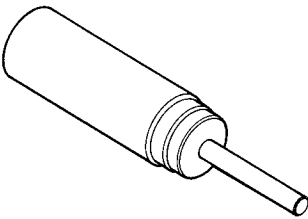

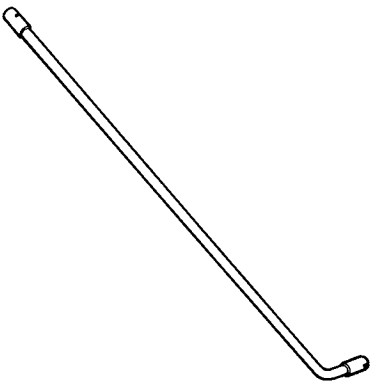
1. Onan Required Tools

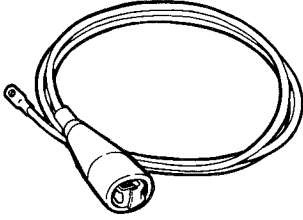
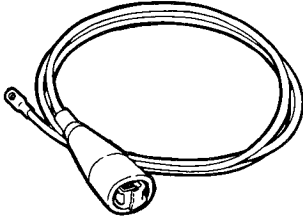
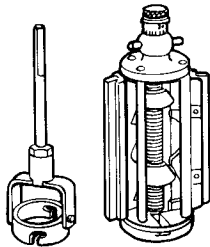
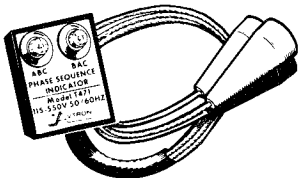
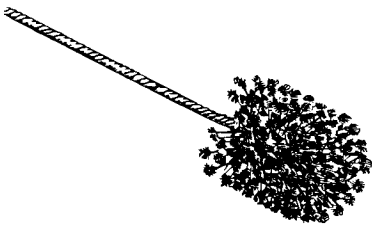
2. General Shop Tools & Equipment

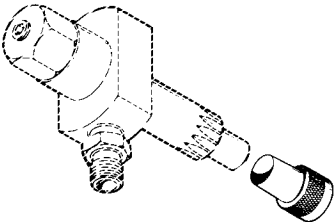
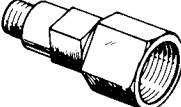
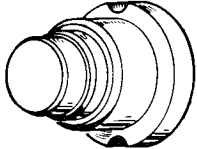
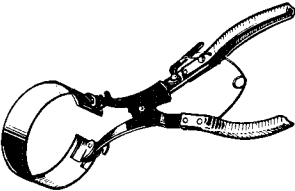
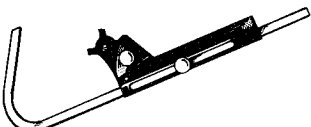
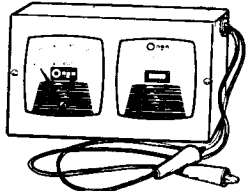
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-416-0325	HYDROMETER, BATTERY Checks specific gravity. Has graduated scale to show condition of battery.		General
ON-420-0107	PLIER, SNAP RING To simplify removal of external snap rings. Spring loaded with cushion grip. Tip diameter .070 for 1-1/2" to 3-1/2" diameter shaft size.		General
ON-420-0110	GAGE, VACUUM & PRESSURE Measures vacuum of 0-28" hg, pressure 0-10 psi. Complete with hose, adapter and instructions.		General
ON-420-0119	VALVE SPRG. COMPRESSOR Heavily built, adjustable safety lock compressor allows use of both hands when valve spring is compressed.		General
ON-420-0139	WRENCH SET, TAPPET ADJUSTING Set of 2 long, thin wrenches for adjusting tappets. Sizes: 7/16" x 1/2" and 1/2" x 9/16".		All engines with adjustable tappets
ON-420-0169	WRENCH, ADJUSTMENT Simplifies carburetor main jet adjustments. Eliminates burns from hot manifold or exhaust pipes. Use with any cross pin adjustment jet. NOTE: See ON-420-0294		All CCK and B-Series Curved Shank

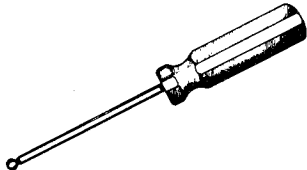
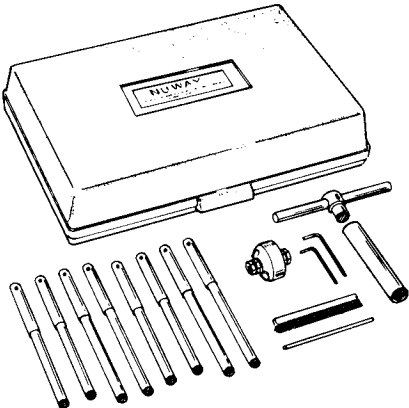
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0194	GROWLER, ARMATURE Tests armature for short circuits. Adjustable to test all Onan built armatures. Designed for bench use.		All rotating armature generators up to 10 KW
ON-420-0208	NOZZLE CLEANING KIT Enables cleaning nozzles rather than complete replacement. Simplifies cleaning carbon fouled nozzles. Complete instructions included. Sold only as complete kit.		All Diesels
ON-420-0210	COMPRESSOR, VALVE SPRING This tool simplifies removal of valve locks. Use with arbor press or valve spring compressor No. ON-420-0210.		All J Series Diesels
ON-420-0221	WRENCH, TORQUE Measures torque accurately. 0-50 ft. lbs., 3/8" sq. drive.		General
ON-420-0222	WRENCH, TORQUE Measures torque accurately. 0-100 ft. lbs., 1/2" sq. drive.		General
ON-420-0236	MANOMETER KIT, PRESSURE Accurate and portable device for determining velocity, static pressure, leakage, gas line pressure. Use for calibrating controls and balancing fuel-air ratios, etc.		General

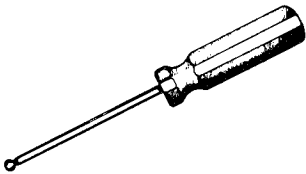
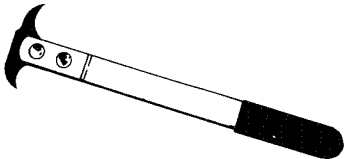
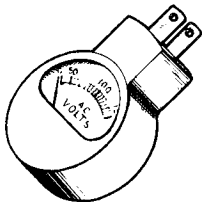
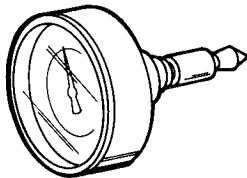
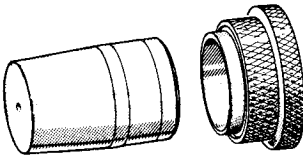
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0250	DRIVER, OIL SEAL NOTE: See ON-420-0456	NOT ILLUSTRATED	
ON-420-0255	TEST PLUG Simulates normal compression firing ground to engine and connect hi-tension lead.		General
ON-420-0258	STONE, BRUSH SEATING Special compound for rapid seating of new brushes on commutators and slip rings.		General
ON-420-0259	STONE, COMMUTATOR Use for smoothing rough commutators or slip rings. Quickly removes carbon glaze.		General
ON-420-0260	REAMER, CYLINDER RIDGE Bore diameter is 2-1/2" to 4-1/8".		General
ON-420-0261	CUTTER BLADE, REPLACEMENT For the ON-420-0260.	NOT ILLUSTRATED	
ON-420-0262	METER, VOLT, OHM, AMMETER Check voltage, ohms, amps. Insulated jaws snap around conductor. Adjustable scale. Case and test leads included. Scale: 0-300 amps, 0-600 volts. 25-ohms mid scale.		General

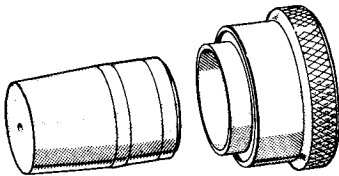
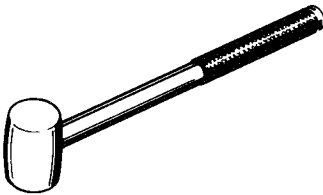
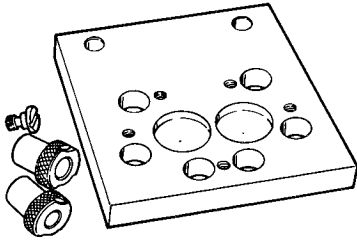
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0264	DRIVER, CAM BEARING REAR Simplifies installation of precision sleeve cam bearings.		All J-Series
ON-420-0270	DRIVER, VALVE SEAT Simplifies installation of valve seats.		All J-Series
ON-420-0280	GAGE, GAS PRESSURE Direct reading diaphragm-type 0-20 oz. pressure, 0-35" water column. Instructions included.		All L.P. and Natural Gas Units
ON-420-0281	INSTALLER, OIL SEAL NOTE: See ON-420-0389	NOT ILLUSTRATED	
ON-420-0294	WRENCH, CARB. ADJ. Simplifies carburetor main jet adjustments. Eliminates burns from hot manifold or exhaust pipes. Use with any cross pin adjustment jet. NOTE: Also See ON-420-0169		All CCK, J, N-Series Straight Shank

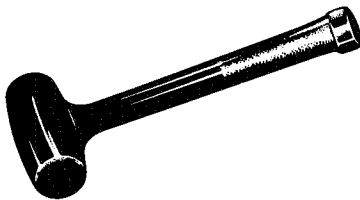
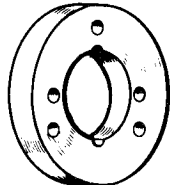
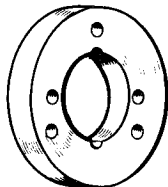
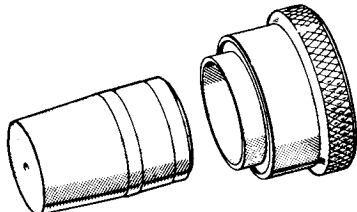
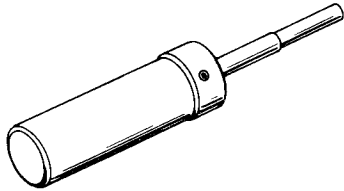
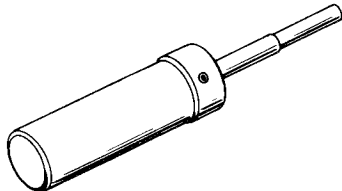
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0301	LEAD ASSEMBLY, RED 6 feet long with lugs to connect to panel and battery clips to connect to generator. NOTE: Used with ON-420-0413 and/or ON-420-0414 load banks.		General
ON-420-0302	LEAD ASSEMBLY, BLACK 6 feet long with lugs to connect to panel and battery clips to connect to generator. NOTE: Used with ON-420-0413 and/or ON-420-0414 load banks.		General
ON-420-0304	HONE, CYLINDER Maintains alignment of original bore. Reconditions cylinder bore with less stock removal. Produces any finish required - fast stock removal assures fast seating of all rings (including chrome). Shipped with rough and medium finishing stones. Cylinder range 2-1/2" to 4-1/8". Use with cast iron, steel, and hardened sleeves 4-1/8". NOTE: See ON-420-0365 (roughing) and ON-420-0366 (finishing) for replacement stones.		General
ON-420-0317	INDICATOR, PHASE Connect to any 3 phase circuit - observe sequence lights - gives instant, positive phase sequence without damage to components.		General
ON-420-0320	BRUSH, FLEX-HONE Diameter 3-3/4", grit 180.		All excluding AJ-AK Series

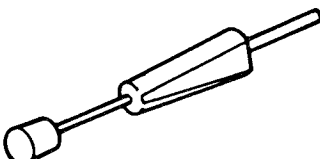
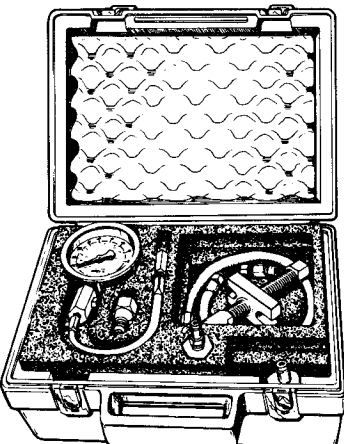
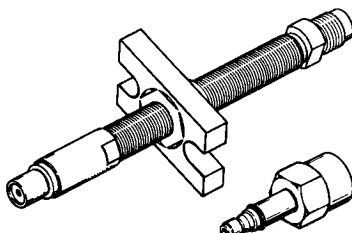
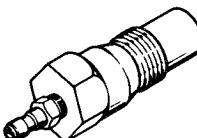
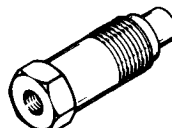
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0321	SLEEVE, NOZZLE CENTERING For centering nozzle in nozzle holder cap nut during assembly to the nozzle holder.		All J Series
ON-420-0322	TEST FIXTURE, DELIVERY VALVE Checks delivery valve seat for leakage. Used with diesel nozzle tester.		All J Series Diesels using PSU AMBAC Pumps.
ON-420-0326	DRIVER, MAIN & CAM BEARING Makes easier installation of precision crankshaft and camshaft bearings.		All J-Series
ON-420-0331	COMPRESSOR, RING Furnished complete with pliers and (6) bands covering range of 2-7/8" to 4-3/8". Fits band at 180° or 90° angle. Self locking with instantaneous release. NOTE: Also see ON-420-0214		General
ON-420-0332	CLEANER, PISTON GROOVE Removes carbon from piston ring grooves. Spring loaded cleaning cutter doesn't gouge or climb out of grooves. Complete with two cutters covering the following groove: 1/16", .070", 5/64", 3/32", 1/8", 5/32", 3/16" and .220". Not for keystone rings.		General
ON-420-0335	METER, A.C. VOLT & FREQUENCY A necessary instrument pack for installation and maintenance of R.V. electric generators sets. AC voltmeter 0-150 volt, plus frequency meter 55-65 hz. NOTE: For 50 Hertz use Onan No. 302-0234 frequency meter.		General

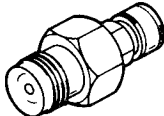
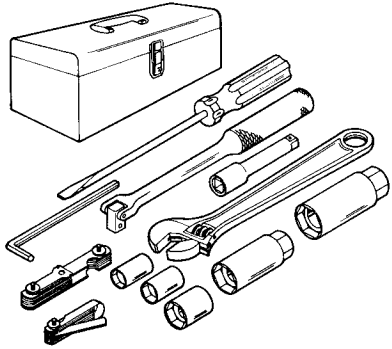
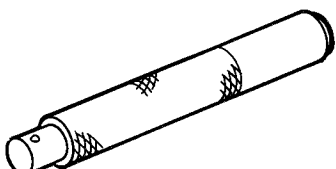
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0338	LOADER, OIL SEAL NOTE: See ON-420-0389	NOT ILLUSTRATED	
ON-420-0339	LOADER, OIL SEAL NOTE: See ON-420-0456	NOT ILLUSTRATED	
ON-420-0342	BALL DRIVER, 3/16" Use on allen head (socket head) type screws, in hard-to-get-at places. Works at any angle. NOTE: Also see ON-420-0355		General
ON-420-0349	CUTTER KIT, VALVE SEAT This portable service tool is for shop or field use. Cutters are simple in construction easy to operate and highly recommended in the small engine market. Long lasting, precision tungsten carbide blades cut the hardest seats. Kit includes: #230 seat cutter head 5/16" - 1 solid taper pilot 5/16" +1 solid taper pilot 11/32" -1 solid taper pilot 11/32" + 1 solid taper pilot 11/32" + 2 solid taper pilot 11/32" + 3 solid taper pilot 5/16" + 2 solid taper pilot 5/16" + 3 solid taper pilot 6.98 mm solid taper pilot 7.0 mm solid taper pilot 7.02 mm solid taper pilot #245 pilot puller pin #503 T-wrench - 1/2" (2 pc) #240 5/64" hex key (allen wrench) #241 3/32" hex key (allen wrench) CB stone cleaning brush NOTE: #230 seat cutter includes tungsten carbide blades. These #250 blades are also available separately. See No. ON-420-0351.		General
ON-420-0351	BLADE, VALVE SEAT Replacement tungsten carbide blade for ON-420-0349.	NOT ILLUSTRATED	

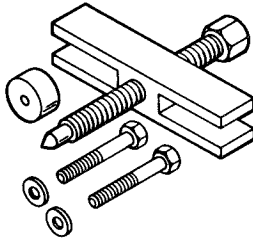
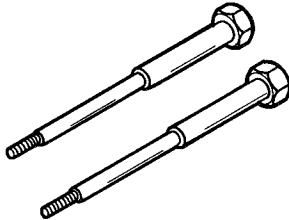
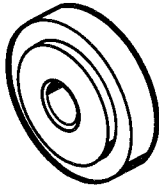
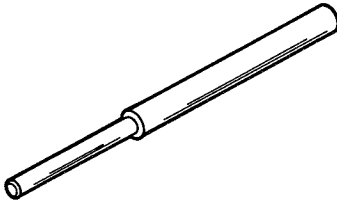

TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0355	BALL DRIVER, 5/32" Use on allen head (socket head) type screws, in hard-to-get-at places. Works at any angle. NOTE: Also see ON-420-0342		General
ON-420-0365	STONE HONE, CYLINDER Replacement roughing stone for ON-420-0304. NOTE: Replacement stone is for AAMCO brand hone, contact Sunnen for replacement stones for that brand.	NOT ILLUSTRATED	
ON-420-0379	PULLER, OIL SEAL Insert tip of tool behind oil or grease seal, press and pull leverage works for you. No pounding and digging that might damage bearings. Two size tips on tool reach in and fit nearly all seal applications.		General
ON-420-0380	TESTER, A.C. VOLT Tests AC line voltage scale 0-150 volts.		General
ON-420-0382	TACHOMETER, HAND HELD Ideal where electric tachometer cannot be used. Hold rubber tip against end of rotating shaft. Read revolutions per minute directly from dial. Range 100 to 4,000 rpm (clockwise or counter clockwise). 4-1/2" long. 2-3/4" diameter dial.		General
ON-420-0387	SEAL EXPANDER AND DRIVER The ON-420-0540 expander is installed into the ON-420-0541 driver. The seal slides over the expander and into place on the driver. The expander is then removed. The ON-420-0531 drive handle and ON-420-0536 disc may then be used to press the driver and seal to the proper depth in bearing plate.		All CCK, B, N, T, AJ, AK, LK, P-Series

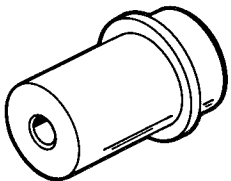
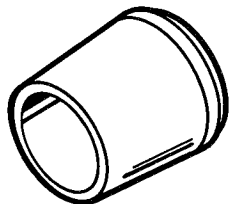
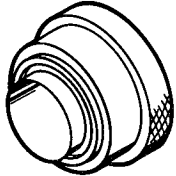
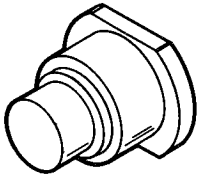
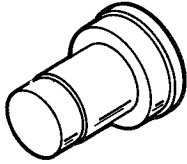
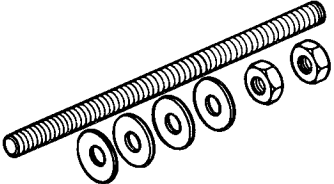
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0389	DRIVER & LOADER, OIL SEAL Protect crankshaft seal when installing gear cover.		All J-Series
ON-420-0390	LEAD HAMMER For striking an object you don't want to damage.		General
ON-420-0393	FIXTURE, PLATE NOTE: See ON-420-0398	NOT ILLUSTRATED	
ON-420-0398	FIXTURE KIT For installation of step studs.		N Series
ON-420-0399	BUSHING - 27/64" NOTE: SEE ON-420-0398	NOT ILLUSTRATED	
ON-420-0400	BUSHING - 33/64" NOTE: See ON-420-0398	NOT ILLUSTRATED	
ON-420-0401	LOCKSCREW NOTE: See ON-420-0398	NOT ILLUSTRATED	


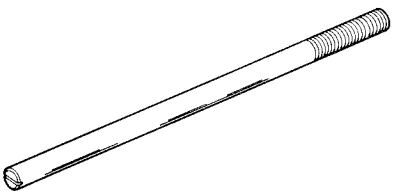


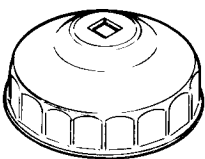
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0404	DEAD BLOW HAMMER The head is filled with #3 shot, delivers sustained impact and maximum force with rebound effect when striking an object.		General
ON-420-0408	PULLER, RING Mounts to crankshaft gear. Extended edge permits use with any gear puller. Includes three no. 10-32x2" socket head cap screws. Replacement screw #15658.		All 2 Cylinder Gasoline Engines
ON-420-0409	PULLER, RING Mounts to crankshaft gear. Extended edge permits use with any gear puller. Includes two 1/4-20 x 1" socket head cap screws. Replacement screw #10016.		All J-Series
ON-420-0456	OIL SEAL GUIDE & DRIVER Simplifies seal installation and prevents damage to crankshaft seal when installing bearing plate.		All J Series
ON-420-0461	STAKING TOOL, VALVE SEAT Assures tight fit of seat. Eliminates danger of insert loosening in its bore.		All B,P Series Intake
ON-420-0462	STAKING TOOL, VALVE SEAT Assures tight fit of seat. Eliminates danger of insert loosening in its bore.		All B, P Series Exhaust

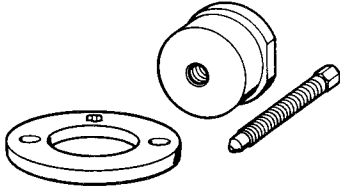
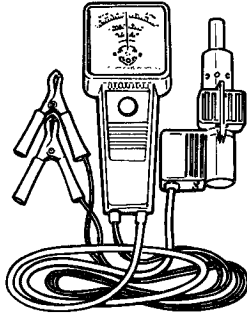
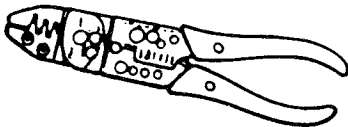
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0487	PIN EXTRACTION TOOL Simplifies removal of pins and sockets from harness plug.		General 16-22 gauge pin
ON-420-0495	DIESEL COMPRESSION TEST KIT Kit includes: ON-420-0496 Compression tester and case ON-420-0497 J Series test adapter ON-420-0498 L/A Series test adapter ON-420-0499 DK Series (Kubota) test adapter		J, L/A, DK Series
ON-420-0496	COMPRESSION TESTER Compression tester and case only. NOTE: Also see ON-420-0495		
ON-420-0497	ADAPTER, COMPRESSION TEST Fits in place of fuel injection nozzle to measure compression. NOTE: Also see ON-420-0495		
ON-420-0498	ADAPTER NOTE: Also see ON-420-0495		
ON-420-0499	ADAPTER NOTE: Also see ON-420-0495		DK Series

TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0500	ADAPTER Allows ON-420-0498 or ON-420-0499 engine test adapter to be attached to a Motorite brand compression tester.		
ON-420-0506	HAND TOOL SET, MAINTENANCE Kit consists of: adjustable wrench 8", 5/32" hex wrench, 3/16" hex wrench, breaker bar 3/8" drive, master ign. gage, spark plug wire gage, 7/17" socket, 1/2" socket, 9/16" socket, 3" extension, 13/16" spark plug socket, screwdriver, tool box.		All B, P, and T Series
ON-420-0507	HAND TOOL SET, MAINTENANCE Set consists of: adapter 3/8" x 1/2", 8" adjustable wrench, 3/8" dr. breaker bar, master ign. gage, spark plug wire gage, 7/16" socket, 1/2" socket, 9/16" socket, 5/8" socket, 3/4" socket, 3" extension, 3/4" combination wrench, screwdriver, 1/4" x 5/16" open-end wrench, filter wrench, tool box.	NOT ILLUSTRATED	All J Series
ON-420-0508	HAND TOOL SET, SERVICE Set consists of: combination pliers, 3/8" socket, 7/16" socket, 1/2" socket, 9/16" socket, 5/8" socket, 3/4" socket, 13/16" socket, 7/8" socket, 15/16" socket, 1" socket, 1-1/16" socket, 1-1/8" socket, ball-peen hammer, master ign. gage, spark plug wire gage, 1/2" dr. adapter, torque wrench, speeder handle, ratchet, 13/16" spark plug socket, breaker bar, screwdrivers, 2" extension, 5" extension, comb. wr. 1/4" comb. wr. 5/16", 3/8" x 7/16" box wrench, 1/2" x 9/16" box wrench, 5/8" x 11/16" box wrench, 3/4" x 13/16" box wrench, filter wrench, tool box.	NOT ILLUSTRATED	All J Series
ON-420-0531	DRIVE HANDLE Used with various tools. Ball detent snaps the drive handle into the tool. NOTE: Also see ON-420-0549		General

TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0533	FLYWHEEL PULLER Used with two 5/16"-18 bolts, included, to remove the flywheel. May also be used with two each ON-420-0535 to remove the crankshaft gear. NOTE: Also see ON-420-0549		All CCK, LK, J, B, N, T, and P Series
ON-420-0535	SPECIAL SHOULDER BOLTS Used with ON-420-0533 to remove the crankshaft gear. Two required. NOTE: Also see ON-420-0549		All CCK, LK, B, N, T, and P Series
ON-420-0536	SEAL REMOVER DISC Used with ON-420-0531 to remove the front and rear crankshaft oil seals. Also used to press ON-420-0541 and seal into bore. NOTE: Also see ON-420-0549		All CCK, LK, J, B, N, T, and P Series
ON-420-0537	VALVE GUIDE DRIVER Assures correct removal of valve guides. May also be used with ON-420-0538 to install new valve seats. NOTE: Also see ON-420-0549		All CCK, LK, B, N, T, and P Series
ON-420-0538	VALVE SEAT PILOT Used with ON-420-0544 to install valve guides. May also be used with ON-420-0537 to install new valve seats. NOTE: Also see ON-420-0549		All CCK, LK, B, and P Series

TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0539	FRONT CRANKSHAFT SEAL INSTALLER Used with ON-420-0531 to install the front crankshaft seal. NOTE: Also see ON-420-0549		All B, N, T, and P Series
ON-420-0540	SEAL EXPANDER Used to expand and load the rear crankshaft seal on to ON-420-0541. NOTE: Also see ON-420-0549		All B, N, T, and P Series
ON-420-0541	REAR CRANKSHAFT SEAL INSTALLER Requires the use of ON-420-0540 seal expander to first load the seal on to this tool then used with ON-420-0531 and ON-420-0536 to drive the seal into the bore. NOTE: Also see ON-420-0549		All CCK, LK, B, N, T, and P Series
ON-420-0542	BEARING INSTALLER Used with ON-420-0531 to install the crankshaft and front camshaft bearings. NOTE: Also see ON-420-0549		All CCK, LK, B, N, T, and P Series
ON-420-0543	BEARING REMOVER Used with ON-420-0531 to remove the crankshaft and camshaft bearings. NOTE: Also see ON-420-0549		All CCK, LK, B, N, T, and P Series
ON-420-0544	VALVE GUIDE INSTALLER Used with ON-420-0538 or ON-420-0547 to install valve guides. NOTE: Also see ON-420-0549		All CCK, LK, B, N, T, and P Series

TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0545	REAR CAMSHAFT BEARING INSTALLER Used with ON-420-0531 to install the rear camshaft bearing. NOTE: Also see ON-420-0549		All CCK, LK, B, N, T, and P Series
ON-420-0546	HEADLESS BOLT Used with 9/16" x 12 x 1-3/4" bolt (OTC #214525) to remove the rotor.		Emerald Generators
ON-420-0547	VALVE SEAT PILOT Used with ON-420-0544 to install valve guides. May also be used with ON-420-0537 to install new valve seats. NOTE: Also see ON-420-0549		N and T Series
ON-420-0549	TOOL KIT, SPECIAL This kit contains all the required tools to properly install all bearings, seals and valve guides in your 2 cylinder engines. Kit consists of: ON-420-0531 Drive handle ON-420-0533 Flywheel puller ON-420-0535 Special shoulder bolts ON-420-0536 Seal remover disc ON-420-0537 Valve guide driver ON-420-0538 Valve seat driver ON-420-0539 Front crankshaft seal installer ON-420-0540 Seal expander ON-420-0541 Rear crankshaft seal installer ON-420-0542 Bearing installer ON-420-0543 Bearing remover ON-420-0544 Valve guide installer ON-420-0545 Rear camshaft bearing installer ON-420-0546 Headless bolt ON-420-0547 Valve seat driver ON-420-0550 Filter wrench OTC #214525 Replacement bolt		See individual components
ON-420-0550	WRENCH, CUP TYPE OIL FILTER Specially designed for easy removal of oil filter. NOTE: Also see ON-420-0549		All B, P, N, and T Series

TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
ON-420-0557	MICROLITE FLYWHEEL PULLER This special tool was designed for holding the fan hub on the Microlite Genset so as not to damage the cooling fins and also doubles as a puller to remove the fan hub from the rotor shaft. A must for every shop!		Microlite Generator Set
ON-420-0560	EXHAUST ANALYZER, PORTABLE Provides pinpoint test accuracy that the serious mechanic demands. Check carburetor condition and adjust air/fuel ratio on most engines simply and accurately. Test Capabilities: Air/fuel mixture ratios on both gasoline and liquid gas. Carburetor adjustments. Other emission tests.		General
ON-420-0561	CRIMPING TOOL Wire fitting crimping tool.		Universal



THE FOLLOWING

SPECIAL TOOLS

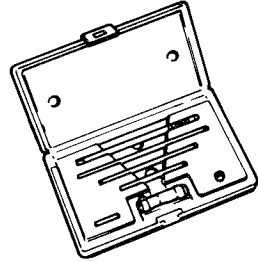
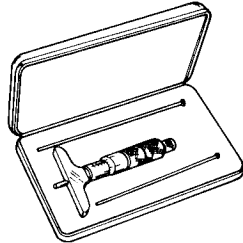
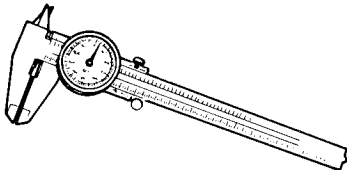
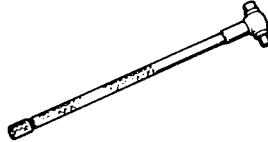
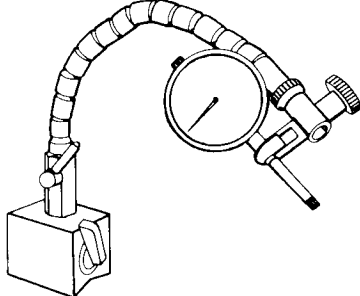
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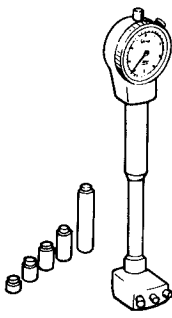
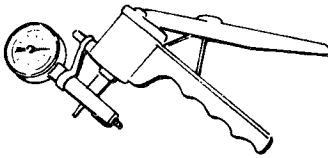
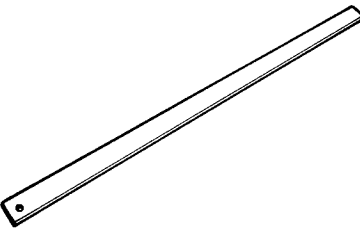
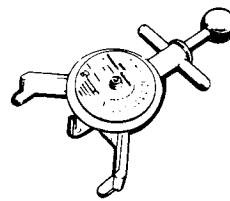
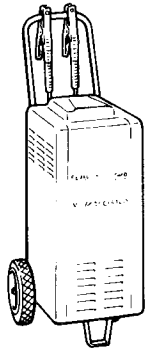
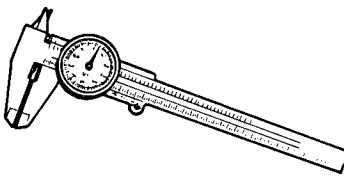
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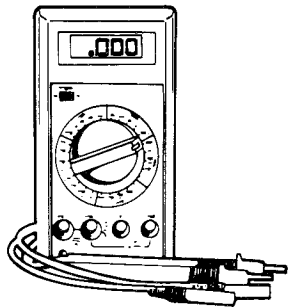
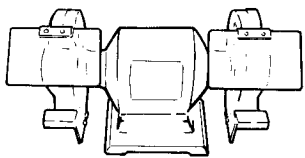
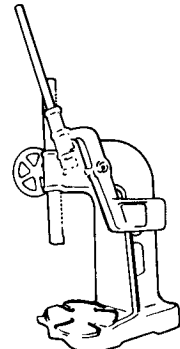
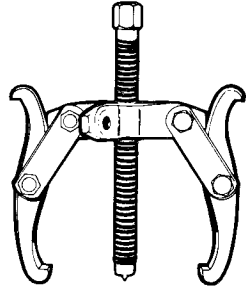
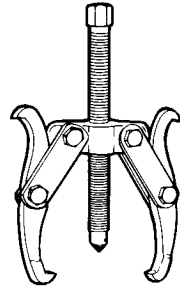
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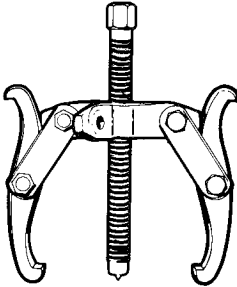
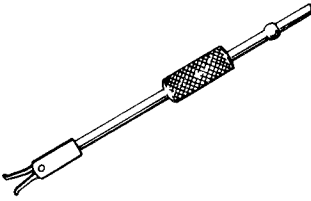
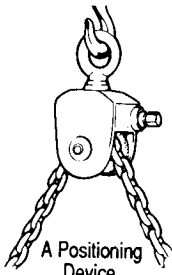
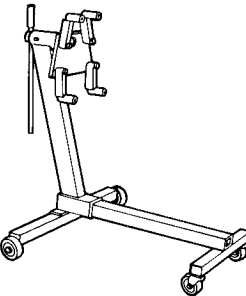
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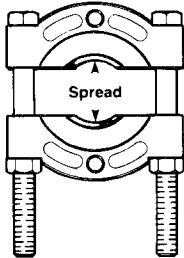
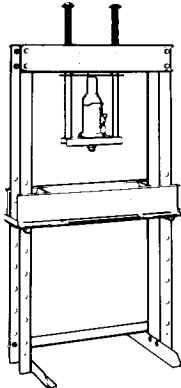
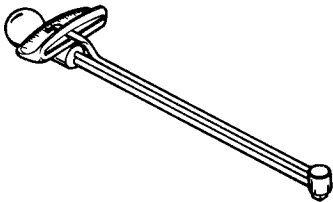
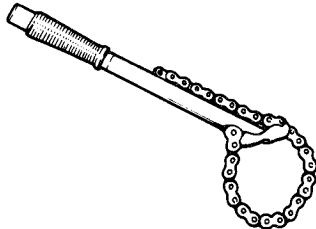
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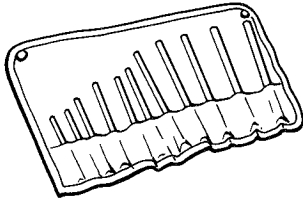
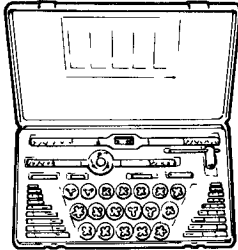
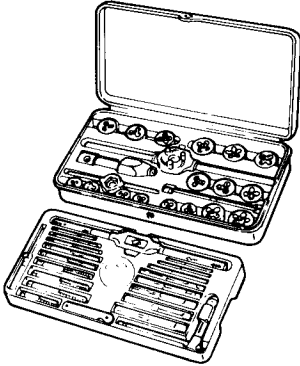
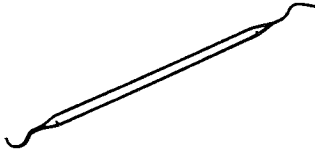
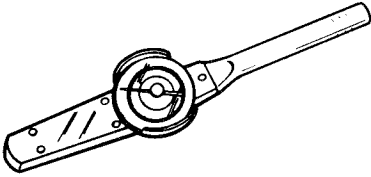
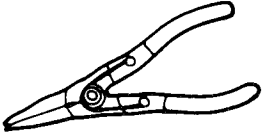
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
OEM1012	INSIDE MICROMETER Use this micrometer to measure bores for taper and out of roundness. The range is obtained by a combination of the micrometer head along with five extensions. A handle is provided for making measurements in small bores. Set is packaged in a fitted case.		General
OEM1013	DEPTH MICROMETER 0-3" Range, .001" graduations.		General
OEM1014	DIAL CALIPER 0-6" Range. Easy to read, scale is graduated in .001" increments. Steel construction.		
OEM1015	TELESCOPING GAUGE, 5/16" TO 1/2" Checks slots, grooves, recesses, cylinders. Both contacts release or lock by turning at end of handle. Measurement is read with micrometer.		General
OEM1023	SMALL HOLE GAUGE SET Used for precision measuring of small holes.	NOT ILLUSTRATED	General
OEM1028	DIAL INDICATOR WITH MAGNETIC BASE, IN FITTED CASE		General

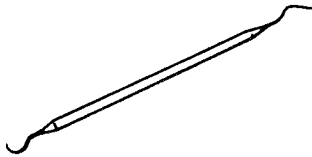
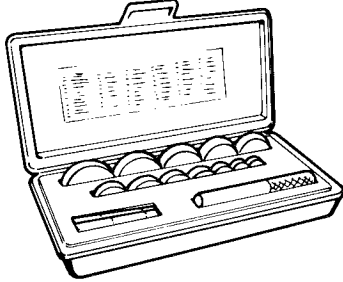
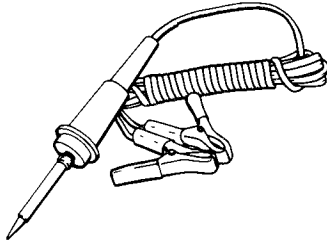
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
OEM1032	CYLINDER BORE GAGES, RANGE 2.6"-7", GRAD. .001", READING 0-50-0 Measure taper and out-of-round from immediate underside of ridge to bottom of critical wear area without removing pistons with these cylinder bore gages. Can also measure bore diameter to depth of 8" when used with a micrometer. Ruggedly constructed gage comes complete with jeweled bearing indicator and six contact extensions. Furnished in fitted case.		General
OEM1285	VACUUM PUMP This pump is used to check, measure and adjust various vacuum operated components. Includes: Plastic hose - 2 ft. lg., six adapters, two lid covers, suction cup.		General
OEM1293	STRAIGHT EDGE, 36" The perfect straight edge for general shop use and high accuracy application. One side is beveled for easy access with scribe, pencil, etc. Hole in one end for hanging. Tool is made of tempered, rust-proof steel, ground on all areas.		General
OEM1294	UNIVERSAL BELT TENSION GAUGE For A-section V-belts (3/8 to 1/2" top width) and K-section (4, 5 and 6 rib) poly V-belts. Range 30 to 180 lbs. and 130-800 Newtons (dual scale).		General
OEM1344	BATTERY CHARGER This commercial charger is designed for 6, 12, 18, & 24 volt use. Specifications: Output current 80/70/45 amps UL listed for indoor/outdoor use. Circuit breaker protection, 5-year warranty on transformer/rectifier. 440 amp boost, fan cooled operation, automatic timer. Copper-wound, heavy duty transformer, by-pass switch.		General
OEM1346	DIAL CALIPER, 0-150 MM For inside, outside and depth measurements. Dial indicator has fine line indicating hand for accurate reading. .005 mm increments		General

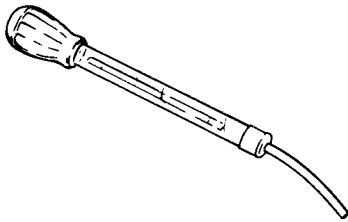
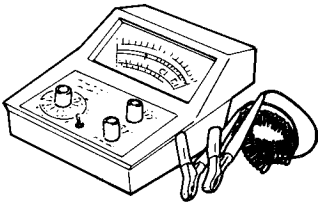
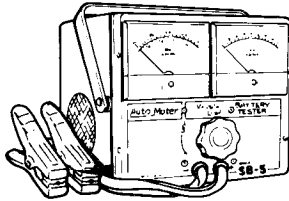
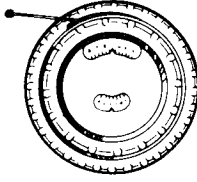
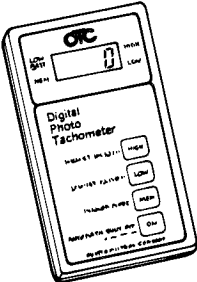
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
OEM1428	MULTIMETER, DIGITAL This multimeter gives you functions and ranges you require for a variety of service applications. Functions like DC voltage (200mv to 1000v), AC voltage (200mv to 750v). Resistance (200 ohms to 20m ohms). Not to mention AC and DC current all the way to 10A, diode checks and instant continuity with a built-in buzzer for resistance less than 100 ohms.		General
OEM1482	8" BENCH GRINDER W/O WIRE WHEEL Big 3/4 hp motor for extra power in heavy duty operations. Switch recessed for protection, yet easily accessible. Replaceable wear plates on tool rest for easy maintenance. Heavy duty housing and wheel guards for durability and long life. Standard equipment includes one 7/8" grinding wheel and one 7/8" medium grinding wheel.		General
OEM4013	BENCH TYPE ARBOR 3 ton capacity press with 11 1/2" ram travel.		General
OEM4021	5 TON CAPACITY - 2/3 JAW PULLER 3 1/4" maximum reach, 7" maximum spread. Heavy duty, forged steel construction.		General
OEM4022	5 TON PULLER - LONG, 2 JAW 5 1/2" maximum reach, 6" maximum spread. Heavy duty, forged steel construction.		General

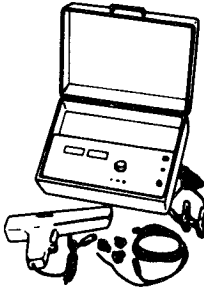
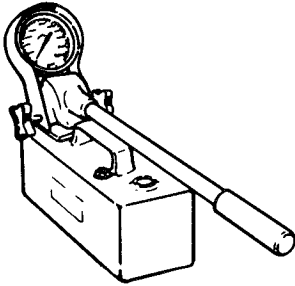
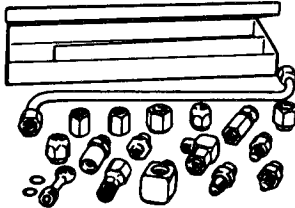
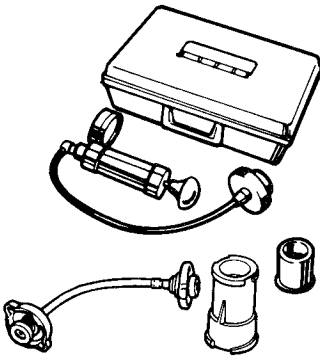
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
OEM4023	5 TON PULLER 5½" maximum reach, 7" maximum spread. Heavy duty, forged steel construction.		General
OEM4095	BLIND HOLE PULLER SET This set provides a complete selection of expanding collets ranging in sizes from 5/16" to 1¾". Collet is placed through bore of part to be removed, then expanded with actuator pin so that lips of collet secure a positive grip for pulling. Force is exerted by means of a forcing screw and bridge assembly or a slide hammer. Individual pieces available separately.		General
OEM4124	2,000 LB. LOAD ROTOR POSITIONING SLING Here's an easier way to handle and position engines, transmissions, machinery and other heavy and bulky components. Used with a crane or hoist. A self-locking worm-and-gear set in the sling's head permits rapid adjustment of the angle of the component being handled.	 <p>A Positioning Device, Not A Hoist</p>	General
OEM4133	1,000 LB. CAPACITY ENGINE STAND Four adjustable attachment arms make engine mounting fast and easy. The engine can be rotated a full 360° with a turn of a handle. A locking pin secures the work in any of eight positions. Both rear wheels lock tightly to anchor the stand and two swivel casters in front provide great mobility.		General

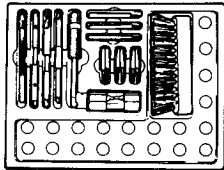

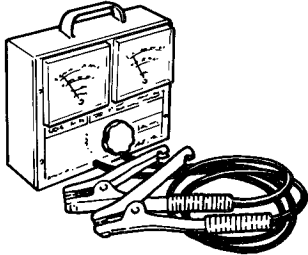
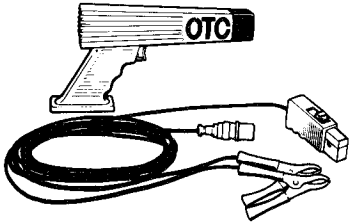
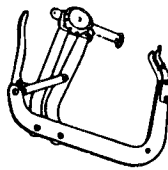
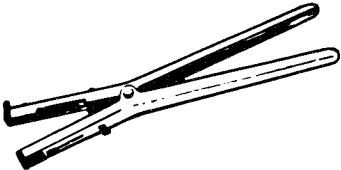
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
OEM4172 Thru OEM4178	BEARING PULLING ATTACHMENTS These versatile puller accessories feature "knife-like" edges which are easily placed behind the part to secure a gripping surface even when clearances are extremely limited. When used with a puller, puller jaws grip attachment's outer edge. Min. and Max. Spread Dimensions: OEM4172 — 1/4" min./7/8" max. OEM4173 — 1/8" min./2" max. OEM4174 — 3/8" min./4 5/8" max. OEM4175 — 1/2" min./5 1/4" max. OEM4176 — 1/2" min./8 5/8" max. OEM4177 — 5/8" min./8" max. OEM4178 — 3/4" min./13 3/8" max.		Cooling System
OEM4274 OEM4275	BOTTLE JACK PRESS This press along with the included bottle jack offers an economical way to get the press you have always needed for those bending, pressing or straightening jobs. It's also great for removal and installation of gears, bearings and bushings. OEM4274 — 12 ton capacity OEM4275 — 20 ton capacity		General
OEM6104	TORQUE WRENCH - 3/8" DRIVE 200 IN. LBS. Used for all types of precision torquing.		General
OEM6214	CHAIN WRENCH The chain wrench is used to secure the fly-wheel during engine disassembly. This wrench can be a very versatile tool in many other applications also. 3" dia. to 6 3/4" dia. range.		General
OEM6232	BUSHING, BEARING & SEAL DRIVER BASIC SET To install a wide variety of bearings and seals.	NOT ILLUSTRATED	General

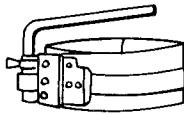
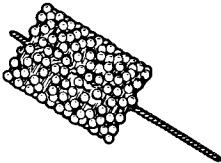
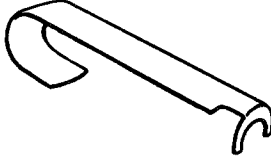
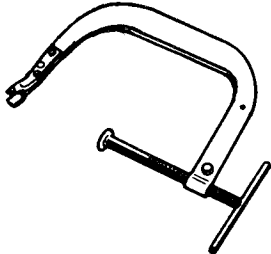
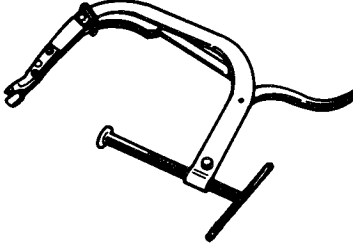
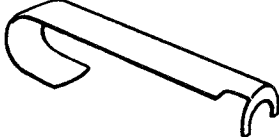
TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
OEM6252	ROLL PIN PUNCH SET 12 Pilot punches sizes 1/16" to 1/2" in handy storage pouch.		General
OEM6283	TAP AND DIE SET Master set from 1/4" thru 3/4" packed in a finished hinged cover wood box. Includes a plug tap and 1 1/2" round die for the following sizes (pipe dies are solid round): 1/4-20NC, 1/4-28NF, 5/16-18NC, 5/16-24NF, 3/8-16NC, 3/8-24NF, 7/16-14NC, 7/16-20NF, 1/2-13NC, 1/2-20NF, 9/16-12NC, 9/16-18NF, 5/8-11NC, 5/8-18NF, 3/4-10NC, 3/4-16NF, 1/8-27NPT, 1/4-18NPT.		General
OEM6284	METRIC TAP AND DIE SET Full range metric set covers 3mm-12mm taps and dies. Set is packaged in a high quality polyethylene case for secure storage.		General
OEM6394	"O" RING SEAL HOOK The answer to the difficult problem of removing and installing "O" rings and seals.		General
OEM6480	TORQUE WRENCH For all types of applications for a precision torque.		General
OEM6486	SNAP RING PLIER SET Set consists of 12 snap ring pliers and plastic case.		General

TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
OEM6505	"O" RING SEAL HOOK The answer to the difficult problem of removing and installing "O" rings and seals. Set of 2 picks.		General
OEM6506	BUSHING, BEARING & SEAL DRIVER STARTER SET For installing a wide variety of bearings and seals.		General
OEM6516	SOLDERING GUN 12 volt, 30 watt soldering iron complete with 12' cord and battery clips. Ideal in the field for on the spot repairs to electrical connectors. Complete with 1/16", 800°F tips. NOTE: For replacement tips order: OEM6517 — 1/16" Screwdriver Tip OEM6518 — 3/32" Screwdriver Tip		General

TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
OEM1043	COOLANT TESTER Summer and winter universal tester for all types of antifreeze solutions. Hermetically sealed chart and thermometer keep out moisture and dirt and stay legible always. Special heattreated glass components resist breakage. Float and thermometer are rubber cushioned for durability.		General
OEM1046	BATTERY TESTER Electronically checks 6 or 12 volt battery conditions, power and state of charge.		General
OEM1053	BATTERY LOAD TESTER Accurately tests 6 and 12 volt batteries, including maintenance-free type.		Battery Testing
OEM1054	VIBRATION TACHOMETER This is a multi-purpose precision instrument. It measures speeds from 800 to 25,000 rpm, measures oscillations and vibrations from 14 to 400 per second.		General
OEM1057	DIGITAL PHOTO TACHOMETER Checks engine speed accurately to ± 1 R.P.M.		General
OEM1057-1	REPLACEMENT REFLECTIVE TAPE Used with OEM1057 Digital Photo Tach.	NOT ILLUSTRATED	General

TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
OEM1062	DIESEL TIMING UNIT Used to check dynamic timing of Diesel Engines using Bosch or Stanadyne fuel injection systems. Unit includes 6mm and 1/4" diameter transducers. Optional item - OEM1058-1 (5mm Transducer)		Diesel Engines
OEM1064	TESTER, DIESEL NOZZLE This instrument lets you perform required tests on fuel injection nozzles in diesel engines... tests for leakage, "pop-off" pressure, spray pattern, and chatter of nozzle valve stem. Totally portable for field use, or can be bench mounted. Displaces 0.147 cubic in. (2.41 cu. mm) per stroke: maximum pressure is 5000 psi.		General
OEM1065	ACCESSORY KIT FOR OEM1064 A complete selection of adapters/connectors for testing nozzles of many types.		All Diesel Units
OEM1347	PORTABLE, MANUAL-OPERATED COOLING SYSTEM CAP TESTER This tester allows you to check pressure caps and cooling systems on standard radiator cooling systems. The gauge allows testing from 1 to 30 pounds pressure. This tester includes adapter for "B" size caps and longer filling necks.		Cooling System

TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
OEM1068	NOZZLE CLEANING KIT Contains the tools needed to properly clean and maintain diesel injection nozzles		Diesel Fuel Injectors
OEM1073	GAUGE, COMPRESSION TESTER This tester is designed for fast, easy professional use on gas engines. Features are as follows: Side release valve for fast successive readings. Patented universal connector fits both 14mm and 18mm spark plug holes. Flex-drive hose gets around obstructions, is heat, gas, oil and solvent resistant. 2 1/2" dial face.		All Gasoline Engines
OEM1300	BATTERY LOAD TESTER Similar to OEM1053, this unit is designed for smaller amperage systems (500 amps or less).		Battery Testing
OEM1359 OEM1360	INDUCTIVE TIMING LIGHT Use to read and adjust engine timing. Uses an inductive pick up clamp for quick and easy connection. The OEM1360 is the same as above but features an advance knob on the back of the handle, for easy checking of advance.		General
OEM6253	VALVE SPRING COMPRESSOR Universal valve spring compressors are ideal for any shop use.		General
OEM6266	PISTON RING EXPANDER Prevents ring breakage from over-expanding. Adjustable for 2 3/4" to 5" diameter.		General

TOOL NO.	DESCRIPTION	ILLUSTRATION	APPLICATION
OEM6267 OEM6269	PISTON RING COMPRESSOR A band type compressor. Can be used when installing pistons in either aluminum or cast iron cylinders.		General
OEM6270 OEM6275	FLEXHONE Flexible, self-centering, self-aligning cylinder hone imparts a plateaued finish, ensuring rapid ring seating and good oil retention. This flexible, centrifugal cutting action hits both high and low spots of cylinder walls as well as under the cylinder ridge. Used with a 3/8" or 1/2" drill and Flexhone oil or 10-30 SAE oil. OEM6270 — 3 1/2" dia. to 3" dia. OEM6275 — 4" dia. to 3 1/2" dia.		General
OEM6401	SPARK PLUG BOOT PULLER Used to pull the boot off the spark plug.		General
OEM6414	VALVE SPRING COMPRESSOR Throat depth, 8"; jaw opening, 2" to 9 1/4". For removing valve spring after the head has been removed.		General
OEM6415	VALVE SPRING COMPRESSOR Throat depth, 3 3/8"; jaw opening, 2" to 5". For removing valve spring after the head has been removed.		General
OEM6508	LONG HANDLE SPARK PLUG BOOT PULLER Used to pull the boot off the spark plug.		General



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